



REPORT OF THE
DEPARTMENT OF AGRICULTURE
OF BRITISH HONDURAS
FOR THE YEAR
1938



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ADDRESSES of OFFICERS.

Agricultural Officer, Belize	Box 149, Belize.
Asst. Agricultural Officer, Stann Creek	Agric. Station, Stann Creek.
Asst. Agricultural Officer, Corozal	Agric. Station, Corozal.
Agricultural Instructor, Punta Gorda	Rice Expt. Station, Punta Gorda.
Junior Agricultural Instructor, Belize	Box 149, Belize.

STAFF LIST.

Agricultural Officers	H. P. Smart, B.Sc. Agr. (S.Af.), A.I.C.T.A. J. F. Ward, M.A., Dip. Hort. (Camb.).
Asst. Agricultural Officers	R. A. Kitching, J.P., C.D.A. (Edin). H. L. Manning, Dip. Agr. (I.C.T.A.). J. M. Cave, Dip. Agr. (I.C.T.A.).
Agricultural Instructor, (Rice Officer)	D. D. Haynes.
Junior Agricultural Instructor	D. L. Foster, Dip. Agr. (I.C.T.A.).
Foreman, Agric. Station, Stann Creek	P. B. Lizarraga.
Foreman, Agric. Station, Corozal	F. F. Orio.
Temporary Local Asst. Rice Expt. Station	C. D. W. Atkins.
Secretary, Board of Agriculture	H. O. E. Longworth.

CLERICAL STAFF.

Chief Clerk, Head Office, Belize	H. O. E. Longworth.
Clerk, Agric Station, Stann Creek	E. S. Elliott.
Junior Clerk, Head Office, Belize	C. A. Burgess.
Junior Clerk, Head Office, Belize	S. O. Messiah.
Typist, Head Office, Belize	Miss S. I. Jex.
Messenger, Head Office, Belize	Win A. Grant.

STAFF MOVEMENTS.

- H. P. Smart, Agricultural Officer, left the Colony on 27th January, 1938, on 4 months vacation leave prior to assuming duties in Tanganyika whither he had been transferred.
- R. A. Kitching, Asst. Agricultural Officer, Stann Creek, acted as Agricultural Officer from 27th January to 31st October, 1938.
- H. O. E. Longworth, Chief Clerk, proceeded on 128 days vacation leave with effect from 23rd May to 27th September, 1938.
- S. O. Messiah, temporarily transferred from the Colonial Secretariat with effect from 23rd May to 30th September, 1938.
- H. L. Manning, Asst. Agricultural Officer, Corozal, left the Colony on 10th June, 1938, on 2 months vacation leave prior to his transfer to St. Vincent.
- D. L. Foster, appointed Junior Agricultural Instructor, with effect from 2nd September, 1938. He arrived in the Colony on 5th September, 1938.
- J. M. Cave, appointed Asst. Agricultural Officer, Corozal, with effect from 2nd September, 1938. He arrived in the Colony on 17th September, 1938.
- J. F. Ward, appointed Agricultural Officer, with effect from 10th October, 1938. He arrived in the Colony on 31st October, 1938.

SECTION I.

AGRICULTURE IN GENERAL.

WEATHER CONDITIONS.

1 The weather was unusually dry in the early part of the year and the onset of the heavy rains in the more northern half of the Colony was later than normal. Except for the northern district ample rains occurred through the Colony. The usual short periods of flooding occurred in September and October. Climatically the year under review was favourable to crop production.

GENERAL SITUATION.

2 The agricultural outlook for the Colony has been none too bright. The banana industry, in which most interest is still displayed, has been through trying times. There has, through a combination of causes, been a decline in the output of fruit both in quantity and quality. The prevailing low prices for coconuts and copra have proved very disappointing. At times it was almost impossible for growers to find a market for their produce. The promise of an excellent season for citrus was marred by the increasing competition with Palestine and at the end of the year by a very dull market.

3 The small sugar industry fared better. The yield of cane and the output of sugar has improved. The total requirements of the Colony are now met by the Corozal Sugar factory and the doubtful possibility of establishing an export in this commodity does not promise much advance in this side of agriculture in the future.

4 The anticipated relief to this rather gloomy picture was not realized owing to unavoidable delays in the opening of the Empire Starch Products Company's Cassava factory.

5 There has, however, been a welcomed increase in the output of the Colony's foodstuffs, principally maize and rice. Although the Colony is self-supporting in the former it still relies mainly on imported rice for its requirements of this commodity.

6 Owing to the decrease in the logging trades increasing numbers of labour have been unemployed some of whom have turned their attentions to the land for a livelihood.

The peculiar concentration of the population away from the best agricultural areas and the difficulties of transport continue to hamper agricultural advancement.

CONDITION OF THE CHIEF AGRICULTURAL CROPS.

7 **BANANAS.** There appears to have been a considerable increase in the area devoted to this crop. Both the output and the quality of the fruit have declined due to various factors. The dry weather experienced in the early part of the year adversely affected banana production on the poorer types of soil. Panama Disease, which is prevalent throughout the southern half of the Colony, still takes its annual toll. In addition the Sigatoka leaf-spot disease (*Cercospora musae*) has spread throughout the Colony and developed extreme virulence during the heavy rains in the latter part of the year.

8 The best quality of bananas are now being produced on the deep riverain silts on the upper portions of the Belize River and around El Cayo. The quality of the fruit from the Northern River and the Santa Ana areas is on the whole poor. The general soil conditions suggest that plantations can be profitable over only a very short number of years. These areas together produce about one third of the Colony's output. For the exports for the years 1934-38 See Table No. 1. It seems probable that the decline in the production of bananas has already set in.

9 **COCONUTS AND COPRA.** The improvement in this trade which met its highest peak last year has not been maintained. The prices of coconuts have fallen to the 1933 level, but those of copra, although not as good as in 1937, have been fairly well maintained. Unless prices improve production will not be maintained at its present rate. For export figures See Table No. 2.

10 CITRUS. The season commenced slowly as there was only a little fruit available. Owing to heavy flowering there were early expectations of an excellent crop. In spite of prices lower than in 1937 the output of cases of grapefruit has approximately doubled. Marsh Seedless gave better returns than the variety Duncan, which is being gradually replaced by the former.

11 The canning and juicing of grapefruit has been continued. This is a useful side-line for disposing of fruit not up to the standard for export. Unless the price of fruit juices increases and there is an improvement in quality, large quantities of fruit will remain unsaleable.

12 The Corozal Producers' Association formed in 1937 shipped 2,178 cases of grapefruit through the British Honduras Citrus Association.

13 There was a very little planting of new areas, during the year under review. Production is still likely to increase appreciably as the considerable area of non-bearing orchards come to fruition. See Table No. 3 for details of export.

14 RICE. According to the purchases of the Government Rice Mills there has been a considerable increase in the production of rice. The output has not yet reached the level of production of 1934. The production of rice in the Belize River area continues to decrease. The presence of the rice station and the rice mill in Toledo District is beginning to stimulate production. An improved variety of rice has already been distributed and the demonstrations of better planting and reaping methods are beginning to have a little effect.

The Colony's production of rice is still approximately 1.6% of its annual consumption. The present tariff on imported rice does not seem to have the desired effect in encouraging the home production.

15 CASSAVA. This Industry, which shows as much promise of future developments as any other, has made no advances owing to various causes which have delayed the opening of the Empire Starch Products Company's cassava factory. The requirements and cultivation of this crop are simple and in this Colony it is singularly free from diseases. It is a promising crop to take the place of bananas in Stann Creek Valley.

16 SUGAR CANE. The Central Factory at Corozal has increased its efficiency of output from an average of 13.2 tons of cane to 10.6 tons per 1 ton of sugar produced. The total production for the year was 1,036 tons. The Colony is now practically self-sufficing in this commodity. The manufacture and export of rum is still maintained as a large side-line in the cane industry, 15,487 liquid gallons were produced during 1938.

17 MAIZE. Owing to the low production of maize in 1937 supplies were short in the early part of 1938. However, the Board of Agriculture during the year purchased 574,418 lb. of maize, a quantity some twenty times as much as that purchased in the previous year. The stimulation in the production of this crop is due to several causes. The Board of Agriculture has probably been offering an uneconomically high price. The deterioration of the banana industry no doubt encouraged interest in subsidiary crops. Favourable weather conditions also encouraged production.

It is likely that the corn requirements of the Colony have been already exceeded and with the high price levels it will be impossible to export this commodity without a large loss.

18 PULSES AND GROUND PROVISIONS. Interest in a small way is being maintained in these crops, the production of which could be greatly increased with benefit to the producer and to the consumer.

19 VEGETABLES. The Corozal Producers' Association has been of considerable value in stimulating the production and marketing of vegetables. The cool dry season of the northern district appears favourable for the production of most types of temperate vegetables. The main problems are concerned with marketing and the stimulation of an interest in vegetables as a wholesome food for the town dwellers.

LIVESTOCK.

20 The main concentration of livestock occur in the Cayo District where several large rancheros produce cattle, mules and horses. Progress in meat production is hampered by the transport difficulties between producer and consumer.

Swine are produced in considerable numbers in the Toledo District and are easily shipped by local schooners for butchering in Belize. This industry was, however, hampered by an out-break of rabies and the consequent enforcing of a standstill order.

A considerable interest is being shown in Poultry raising and a quantity of good birds exist throughout the Colony.

A desire to improve livestock exists in the Colony but the present uncertain and unremunerative markets are not likely to encourage much outlay in this respect.

PESTS AND DISEASES.

21 CITRUS. There has been no outstanding diseases or pests attacking citrus during the year. Scale insects, rustmite, melanose and scab occur and disfigure fruit, but the more progressive growers are able to control these troubles.

22 BANANAS. Panama Disease is prevalent in the southern half of the Colony and is causing an unknown amount of damage.

23 Sigatoka leaf-spot disease (*Cercospora musae*) is causing much concern to growers throughout the Colony. Its spread has been very rapid during the last two years. The disease becomes particularly active during periods of low temperature and high humidity. The worst outbreaks appear to occur in periods of prolonged rainfall. Bananas growing on shallow unsuitable soils appear to suffer most severely. It is not generally realized that sigatoka causes irregular "ripening" before the fruit is fully developed thereby causing an increase in the number of rejects.

Very little control beyond cutting out diseased leaves has been attempted. The lack of cultivation and the smallness of the plantations will make control very difficult.

24 COCONUTS. The coconut scale (*Aspidiotus destructor*) appears to be on the increase and is now found on most of the plantations. Occasionally complaints occur of beetles causing damage to the palms.

25 CEREALS. Froghoppers and grasshoppers have caused a certain amount of damage amongst rice and maize, more particularly in the Toledo District.

SPECIAL FEATURES.

26 The Board of Agriculture continued on the same lines as in previous years. The largest turn-over yet experienced by the Government Rice Mills and drying kilns took place during the year, as is summarised below:

Product	Purchases in lb.	Sales in lb.
Maize	574,418	28,463
Padi	79,710	2,470
Rice (milled)		11,971
Rice bran		2,540
Rice ends		1,506
Red Kidney Beans	7,412	3,170
Black Beans	10,571	4,934
Black Eye Peas	1,101	923
Cacao	231	218

27 LAND SETTLEMENT. The Agricultural Settlement at Rockstone Pond, the commencement of which was reported in the 1937 Annual Report has now absorbed 37 families. At present one settler has proved a failure and the remainder with outside work have managed to eke out an existence. The type of settler, derived from a race which has been divorced from the land for several generations, his dislike of co-operation and distance from market, coupled with land of a secondary agricultural value, are not materials with which to make successful settlement of any duration.

Bananas are still the main standby but the settlers are making attempts to produce cereals and ground provisions. Most of them have established a few fruit trees and coconuts.

A school has been established and a resident school teacher as well as the supervisor live on the settlement. Some form of social recreation is required to prevent the week-end drift to Belize.

SECTION II.

THE DEPARTMENT OF AGRICULTURE.

28 The Department of Agriculture has passed through an unfortunate period during the last twelve months. Mr. H. P. Smart, Agricultural Officer, left the Colony in January on transfer to Tanganyika Territory. His relief, Mr. J. F. Ward, did not arrive in the Colony until the end of October. The Department was further understaffed in that Mr. H. L. Manning, Assistant Agricultural Officer, left the Colony in June to proceed to St. Vincent as an Officer of the Empire Cotton Growing Corporation. His relief, Mr. J. M. Cave, did not arrive until September. Various minor staff changes have occurred at the Agricultural Stations to complete the disorganization.

It is earnestly hoped that a period will ensue, in which the continuity of staff, so necessary for regular progress, will be maintained.

29 In the past one of the main problems of the Department has been the establishment of export crops. With this object in view the Agricultural Station at Stann Creek was established to promote the citrus industry and to supply graded uniform planting material. More recently its energies have been turned to the establishment of a cassava industry. The Corozal Agricultural Station, to a lesser degree, was faced with the problem of establishing the sugar industry of that district and devoted its energies to the introduction of more productive varieties of cane.

30 As these activities have been fulfilled the Department is now in a position to direct its energies to carrying out investigations into the numerous agricultural problems of the Colony. We as yet know little about the best manurial and cultural treatments for local conditions. A system of farming to displace shifting cultivation has still to be evolved. And in this respect the possibilities of incorporating animal husbandry with crop production need investigating. The need of land settlement, and of increasing the Colony's production of foodstuffs in themselves present numerous problems for elucidation.

31 In Section IV (A) will be found the reports of the District Agricultural Officers on the year's work in their respective districts.

SECTION III.

EXPENDITURE and REVENUE.

Expenditure.

1-11. Personal Emoluments	\$9,926.46	\$9,926.46
<i>Other Charges.</i>		
12. Transport and Travelling	\$1,805.72	
14. Herbarium and Museum		
15. Laboratory Equipment	100.00	
16. Samples and Exhibits	1.50	
17. Rental of Office	150.00	
18. Incidentals and Freight	354.68	
19. Investigation and Trial Shipments.....	648.08	
20. Plant Nurseries, Seeds and Plants	1,628.24	
21. Meteorological Instruments, Upkeep	39.16	
22. Bicycle Allowance.....	45.00	
23. Inspection of Export Fruit.....		
24. Provision and Maintenance of Working Livestock	1,954.84	
26. Fertilizers and Insecticides	404.27	
27. Trackage and Upkeep for Cars and Tractors.....	377.12	
28. Implements, Upkeep and Repairs	250.02	

29. Tools and Equipment	438.17	
30. Agricultural Shows and Competitions	178.39	
31. Training of Pupils	26.00	
32. Stann Creek Agricultural Station, Labour, etc.	3,596.99	
33. Corozal Agricultural Station, Labour, etc.	2,649.55	
34. Rice Station, Punta Gorda, Labour, etc.	1,906.71	
35. Citrus Nurseries	1,986.29	
38. Loss on Working, Board of Agriculture.....		
39. Control of Pests on Crown Lands	18.48	18,559.21
<i>Special Expenditure.</i>		
40. Purchase of Lorry.....	730.00	
41. Tractor and Implements, Corozal	2,577.44	
42. Orange Walk Agricultural Station.....	840.65	
43. Labourers' Huts	795.74	
45. Plant Quarantine House, Belize ..	114.33	
46. Planting Cassava at Pomona	1,740.13	
47. Agricultural Demonstration Plots	277.36	
48. Rockstone Pond Settlement (Special Warrant)	881.07	7,956.72

Hurricane Reconstruction Loan (1931) Appendix A.

1. Salary of Agricultural Instructor, Punta Gorda	1,471.37	
2. Salary of Foreman, Rice Station, Punta Gorda	366.60	
3. Maintenance of Rice Station, Punta Gorda	514.64	
4. Soil Surveys.....	78.84	
5. Stock Breeding Experiments	306.18	
6. Citrus Nurseries and Plant Propagation	30.21	
6. Rockstone Pond Settlement, S. W.	3,531.89	
Advances—Board of Agriculture	17,202.24	
Advances—Agstat, Stann Creek.....	404.53	
Advances—Wee Wee Ant Control.....	376.96	
Deposit, Rockstone Pond Settlement.....	197.71	24,481.17

Total Agricultural Department \$60,923.56

Revenue.

Sale of Produce and Plants, Agricultural Stations	\$ 604.98	
Sale of Citrus Plants	691.80	
Advances—Board of Agriculture	1,609.92	
Advances—Agstat, Stann Creek.....	280.97	
Advances—Wee Wee Ant Control	306.15	
Deposit, Rockstone Pond Settlement.....	329.97	
Deposit, Stock Breeding	57.20	\$3,880.99
		\$3,880.99

J. F. WARD,
Agricultural Officer.

M.P. 01119.

SECTION IV (A).

**REPORT ON THE AGRICULTURAL STATION AND DISTRICT
OF STANN CREEK FOR THE YEAR 1938.**

(Officer in charge, Mr. R. A. Kitching, C.D.A. (Edin.).)

I. THE DISTRICT.

1 Except for the Citrus Industry, very little advance was made during the past year in Agriculture.

2 The Banana Industry remained at about the same level, with the prospects of decreasing rapidly on account of Panama Disease and Sigatoka Leaf Spot Disease and the lack of further new lands for Banana growing.

3 The Cassava Industry has not advanced much on account of the failure to complete the erection of the factory during the year; it is now expected to start operations in February, 1939.

4 The Citrus Industry has gone ahead in that the highest output for any one year for the District was reached, 50,583 cases of fresh fruit having been exported. The prices obtained for much of the fruit, however, were disappointing, especially for the months of January, February, March and October, November and December.

5 Corn, Pulses, Ground Provisions and Vegetables continue to be grown but to no greater extent than the previous year, apart from Ground Provisions, which are on the increase.

6 It is expected that once the Railway is replaced by the Road, that the production of food crops will increase as it should then be easier to place these products on to their respective markets and to obtain reduced freight rates.

7 The weather has been drier in comparison with recent years. The following table shows the rainfall for different parts of the District for the past three years:

	1936.	1937.	1938.
Stann Creek Town (Seacoast)	112.50 ins.	85.87 ins.	82.21 ins.
Agricultural Station (8 Mls. inland)	128.00 ins.	121.38 ins.	81.35 ins.
Industrial School (12 Mls. inland)	140.11 ins.	126.54 ins.	92.73 ins.
Alta Vista (14 Mls. inland)	149.75 ins.	146.39 ins.	116.01 ins.
Middlesex (22 Mls. inland)	158.80 ins.	125.49 ins.	92.69 ins.

The dry weather enabled the clearing and burning of new land for Cassava planting to be carried out well and economically and encouraged the flowering of all kinds of citrus.

8 The cost of labour went up about 20% in the District, principally on account of the demand for labour on the new road but also through the increase of work in the Mahogany Industry and the bigger demand for labour in the District for agricultural work. Labour was scarce during the "Dry Season" February, March, and April when there was the biggest demand and many Agricultural operations were impeded on that account.

CITRUS.

9 This Industry, as already stated has gone ahead in production, many of the young groves coming into bearing for the first time and the old groves increasing their output. There has been very little extension of the area under Citrus, principally on account of the lower prices received during the past few years and the fear of over production for the World's markets. It is expected however that once the Colony has a sufficient quantity of fruit to obtain a substantial reduction in the ocean freight rates the industry will be able to hold its own with World competition on the Empire markets.

10 The following table gives the numbers of cases of Citrus exported and processed during 1938:

	Fresh Fruit Shipped.	Bye-Products & Local Sales	Totals.
<i>Grapefruit.</i>			
Marsh	37,967	3,815	41,782
Duncan	12,280	1,595	13,875
	<u>50,247</u>	<u>5,410</u>	<u>55,657</u>

Oranges.

Valencia	245	19	264
Washington Navel	34	1	35
Temple	5		5
Other various	15		15
	299	20	319

Tangerines.

Various	13		13
	13		13

Lemons.

Various	24		24
	24		24

Totals			
	50,583	5,430	56,013

11 The area now under Citrus is as follows (in acres).

	Bearing		Non-Bearing	Total
	Old	New		
<i>Grapefruit.</i>				
Marsh	200	310	312	822
Duncan	100	55	35	190
Other various	10	10	3	23
	310	375	350	1,035
<i>Oranges.</i>				
Valencia	5	5	10	20
Other various	3	12	15	30
	8	17	25	50
Other Citrus	3	12	36	51
Total	321	404	411	1,136

There has been very little increase in acreage during the past year and some growers have been destroying their Duncan Grapefruit or top-working them with Marsh Seedless.

12 It is estimated that the 1939 crop will be over 75,000 cases.

13 The "canning" and "juicing" of grapefruit has been practically stopped on account of the low prices obtained for these products.

CASSAVA.

14 The Cassava Factory is now nearing completion and is expected to start operations in February 1939. A large amount of the cassava planted for the factory has now been in the ground too long and has started to deteriorate, chiefly on account of the difficulty of keeping it weeded for periods longer than 18 months. Four hundred acres are ready for reaping and another three hundred acres will be ready before the end of 1939.

15 So far the local planter has not gone in for this crop on a large scale, still preferring to try and grow bananas on land which is badly infested with Panama Disease; a large number, however, have planted small plots. The granting by the Government of a loan to assist cassava growers has increased the interest taken in this crop. It is felt however that until the factory starts operations and starts buying cassava the small planter is not going to plant much cassava, but that once the factory starts and his market is assured a larger area will be planted. It is estimated that there will be 1,500 acres under Cassava by the end of 1939.

16 The factory will be capable of handling 10,000 tons of roots per year and provision is being made to be able to instal machinery to double its capacity should the roots become available.

17 So far no disease has made its appearance on the Cassava. Wee-Wee ants continue to be a troublesome pest and a fly "maggot" has been found boring into the growing shoots and causing some "die-back" and much branching. This does not appear to affect the crop and the branching helps to smother weeds. Wild pigs are doing some damage in some areas but it is hoped to be able to control these by shooting and trapping.

BANANAS.

18 The export of Bananas has gone down. There is very little new land available in the district for this crop and Panama Disease and Sigatoka Leaf Spot are rapidly reducing production on the old plantations. Sigatoka is not so serious in this District as in some other parts of the Colony but Panama Disease is prevalent all over the District.

19 The following Table gives the output of Bananas for the Stann Creek District for 1938, (Bunches);

Stann Creek Valley.	9's.	8's.	7's.	6's.	Total.
January	1,258	1,318	2,459		5,035
February	896	925	1,395		3,216
March	1,000	1,064	1,354		3,418
April	1,358	1,585	1,982	1,430	6,355
May	1,197	1,590	1,952	1,444	5,883
June	3,020	3,062	2,824	1,503	10,409
July	6,120	3,376	2,028	366	11,890
August	6,143	2,805	1,543		10,491
September	6,048	3,728	2,074		11,850
October	2,313	3,006	2,702		8,031
November	1,143	1,705	1,920		4,768
December	999	1,437	1,763		4,199
Total	31,495	25,601	23,996	4,443	85,535

Exports from other parts of the District 31,303

Totals **116,838**

Total Exports for 1937 186,280 Bunches.

Estimated crop for 1939 85,000 Bunches.

MINOR CROPS.

20 There has been a slight increase in these crops, a few small areas of Coconuts having been planted and there has been a larger supply of "food-crops" following a demand for such crops by the labour employed on the road. Transport costs make the development of a market for "food-crops" in Belize difficult as the freight eats up all the profit.

LIVESTOCK.

21 Greater interest is being taken in the raising of pigs, cattle and poultry and the demand for breeding stock is increasing. A shortage of suitable stock is keeping back the expansion of this Industry. The District is not self-supporting in beef, pork, poultry or eggs as yet, cattle being imported from Spanish Honduras and pigs from other parts of the Colony. No outbreaks of disease were reported during the year.

II. THE AGRICULTURAL STATION, STANN CREEK.

22 Owing to a shortage of staff there was very little expansion of work on this Station, only routine work being carried out and the existing experiments maintained. The area under cultivation was less than the previous year, some of the land being rested.

23 Much drier weather was experienced than for the two previous years and there was no trouble from flooding. For meteorological details see Table No. 6.

PLANT PRODUCTION.

- 24** The following plants and seed were introduced and established during the year :
- From Spanish Honduras Seed of *Garcinia Mangostena*
 From U. S. A. Vegetable Seed
 From Malaya Cassava Varieties, Cuttings.

PLANTING MATERIAL AND SEED DISTRIBUTED.

- 25** The following seeds and plants were distributed :

		1938	1937
Banana and Plantain Bits	No.	305	
Breadfruit Trees	"	12	20
Cassava Cuttings	"	282,700	1,565,695
Citrus, Budded Trees			
Grapefruit	"	2,487	6,545
Oranges	"	1,068	1,570
Tangerines and Mandarines	"	623	229
Limes and Lemons	"	1,201	445
Other Citrus	"		74
Citrus Budwood	"	6,400	
Cocoa and Dasheen Tubers	"	143	10
Coffee Seedlings	"	800	824
Coffee Seed	lb.	20	
Green Manure and Cover Crop Seed	"	5	64½
Corn Seed	"		180
Grass Cuttings	No.	16,995	3,756
Mango Trees, Grafted	"	108	22
Ornamental Trees and Shrubs	"	9,345	708
Papaw Seedlings	"	120	86
Pineapple Slips	"	470	337
Sugar Cane Cuttings	"	1,200	200
Sweet Potato Cuttings	"	606	900
Yam Tubers	"	450	1,340
Miscellaneous Economic Trees	"	588	48

CROPS UNDER TRIAL.

- 26** Trials and observation plots have been laid down to deal with the following main crop plants; Bananas, Citrus, Cassava, Tung Oil, Cacao, and Coffee.

BANANAS.

- 27** Only varieties immune to Panama Disease have been retained on the Station, the fruit being sold locally or fed to the pigs. Sigatoka Leaf Spot has been seen on all the varieties grown here except on the Manilla Hemp, and has been least severe on the "Red" banana.

CITRUS.

- 28** The trees in the "Manurial and Cultural Trial" planted in December 1935 have started to bear a few fruit. So far no conspicuous difference can be seen in the different treatments.

- 29** The "Stock-Trial" observation plots show that the "sour-orange" stock is still the best available stock for this District. Most of the "varietal" observation plots bore good crops. Tree records of the more important varieties are being kept.

- 30** The majority of the fruit reaped was sold through the British Honduras Citrus Association and a small amount was disposed of locally.

The amount of fruit sold through the British Honduras Citrus Association from the Agricultural Station during 1938 is shown in the following table:

Grapefruit

Marsh	130 cases
Duncan	334 cases
Other varieties	76 cases
Oranges	81 cases
Lemons	18 cases
Tangerines	10 cases

Total 649 cases

Number of fruit sold locally:

Grapefruit	1,232
Oranges	6,371
Lemons and Limes	3,336
Tangerines & Mandarines	1,606

Total 12,545

CASSAVA.

31 Multiplication plots of the varieties which have shown the best in previous trials were planted out and planting material of these varieties have been distributed to planters in the Valley.

The Cassava varieties received from Trinidad were reaped and replanted on a larger scale. Some new varieties were received from Malaya during the year but only two of the cuttings took, Native No. 6 and Aipin Mangi. These will be set out in trial plots during 1939.

TUNG OIL.

32 Both plots of *Aleurites montana* continue to grow well but the yield from the plot planted in December 1932 is disappointing, not averaging more than $\frac{1}{2}$ lb. per tree of shelled nuts. The *Aleurites Fordii* top-worked on *A. montana* is doing much better than on its own roots and may prove successful.

CACAO.

33 The Criollo Cacao observation plot planted in January 1935 bore a few pods which were used for seed.

COFFEE.

34 The Liberian Coffee planted in November 1933 again bore a large crop and the trees, apart from those on some low land which is difficult to drain, have grown well. The Arabian Coffee planted October 1935 has grown well but the crops have been very light. Robusta Coffee planted at the same time has made more headway and this variety looks as if it will be suitable for this District. The Excelsa Coffee is growing well but so far has produced very few fruit.

MISCELLANEOUS CROPS.

35 Other crops are maintained for observation and multiplication purposes. These include Ginger, Various Pulses, Vegetables, Pineapples, Ground Provisions, Arrowroot, Papaws, Mangoes, Fodder Grasses, Cover Crops, and various Fruit Trees.

NURSERIES.

36 Although the Citrus nurseries were continued on a reduced scale, the demand for plants has fallen far short of the supply on hand. The propagation of other fruit trees and ornamental plants has been continued but the demand has not come up to expectations, and many were given away in order to encourage their production in the Colony.

LIVESTOCK.

37 The livestock on the Station is as follows:—

Working Steers	6
Mules	1
Horses	1
Pigs	12

The pigs consist of one pure bred Berkshire boar, one pure-bred Berkshire Sow, three local bred sows and seven cross bred piglets.

All the steers and the horse kept well during the year but the mule died and had to be replaced by another.

The Berkshire sows again gave a lot of trouble when farrowing and nursing in spite of efforts being made to give them satisfactory and balanced rations entailing the importing of concentrated foods from abroad. One of them died during the year. The Berkshire Boar gave very little trouble and continued to thrive. A larger number of sows were sent to the Station for serving than during the previous year and the resulting litters have been satisfactory. Thirteen young boars and nine young sows were distributed to different parts of the Colony during the year.

EXTENSION WORK.

38 The Assistant Agricultural Officer paid regular visits to plantations and holdings in the Stann Creek District and made tours in the Belize, Toledo, Cayo, Corozal, and Orange Walk Districts while acting as Agricultural Officer.

R. A. KITCHING,
Assistant Agricultural Officer,
Stann Creek District.

SECTION IV. (B).

REPORT OF THE AGRICULTURAL STATION AND DISTRICT. COROZAL FOR THE YEAR 1938.

(Officers in Charge Mr. H. L. Manning, Dip. Agric. (I.C.T.A.)

(1st January, 1938 to 10th June, 1938.)

Mr. J. M. Cave, Dip. Agric. (I.C.T.A.).

I. THE DISTRICT.

The interest shown in the agricultural development of the district in 1937 has continued in 1938.

2 The Corozal Sugar Factory more than doubled its previous production of sugar and the contracting cane growers were able to send in nearly 90% of the Factory's requirements. Sugar cane cultivation has made rapid strides towards more efficient methods but there is still much to be done in this direction.

3 The citrus production has increased and bearing was of a higher order during the year. Several shipments of Grapefruit were made in conjunction with the Citrus Association of Stann Creek and good prices were obtained especially for the September and October shipments. The Corozal Producers' Association has been of great assistance to agriculturists in the district as almost all the citrus and coconut producers have availed themselves of its facilities.

4 The marketing of vegetables during the early part of the year through the Corozal Producers' Association has demonstrated the possibilities of this industry. The need for better co-operation in order to develop a more orderly system has also shown itself and the future of this industry lies in the lengthening of the period of economic production and the regulation of the supply of various types.

5 The maize production during the year was above the average, although, due to the severe dry weather conditions prevailing just after planting, it was feared that there might have been a serious shortage of this very vital crop. The purchasing of maize by the Board of Agriculture was this year extended to Corozal and has greatly assisted growers by providing a good cash return for their surplus. The price paid by the Board of Agriculture at the Agricultural Station, Corozal, of \$1.75 per 100 lb. had the effect of raising the prices offered growers by the traders.

6 The mean annual rainfall for the last ten years was more than 17 inches higher than that recorded during the year. This, in conjunction with high soil temperatures and the lack of any pronounced cold spell at the end of the year, has been severely felt in all agricultural production and will be probably accentuated during the dry season to be expected at the beginning of 1939. For details see Table No. 7.

The main crops of the district are as follows:—

CITRUS.

7 The area under exportable types increased by approximately six acres during the year. The present areas under citrus are as follows:—

Year	Variety	Bearing		Non-bearing		Total
		Budded	Native	Budded	Native	
1937	Grapefruit	32	80	30	10	152 acres
	Oranges		75	8	10	93 acres
	Lemons			5		5 acres
1938	Grapefruit	32	80	32	10	154 acres
	Oranges		75	10	10	95 acres
	Lemons			7		7 acres

8 The exports of grapefruit through the Stann Creek Citrus Association totalled 2,178 cases. A trial shipment of 10 cases of local oranges was made but the results are not yet known.

9 One grower has become interested in the production of limes and hopes during the next year to have 25 acres under this crop. It is hoped that favourable markets for limes and their bye products may encourage the development of this.

COCONUTS.

10 The prices for shelled nuts have been very low during the year and little trade has been done. Producers have therefore been unable to keep their groves clean or continue cultural operations owing to the depressed market.

11 The Corozal Producers' Association shipped for producers a total of 100,000 nuts which gave an average net return of approximately 60c per 100 nuts. The production of nuts during the past two years can only be approximated as growers have been unable to dispose of their produce.

12 The production of nuts for the last five years is as follows:—

1934	595,012
1935	1,262,563
1936	851,098
1937	800,000 approx.
1938	1,000,000 approx.

SUGAR CANE.

13 During the year a total of 10,979 tons of cane were ground at the Corozal Sugar Factory and produced 1,036 tons of sugar or an average of 10.6 tons cane per ton sugar as against 13.2 for 1937. The contractors to the Factory supplied just over 90% of the cane grown and it is expected that with the new areas of P.O.J.2878, D.625 and Crystallina to be reaped during 1939 that they will supply all the Factory's requirements.

14 The revival of the sugar industry in the district is at last causing cane growers to pay more attention to better and more intensive methods of cultivation. The increase in the area under more productive varieties and the reduction in the length of ratooning has caused the average tonnage per acre to rise, although it is still in the vicinity of 15 tons per acre.

BANANAS.

15 The deterioration in the banana industry which became evident in 1937 has continued and further plantings have almost ceased. Sigatoka leaf disease has spread considerably and the uneconomic state of the industry has made any attempt at control impossible.

MAIZE.

16 It is impossible at present to estimate the acreage and production of maize, which is the main crop of the Indian population, but it is evident that the 1938 crop was above the average.

17 The purchase of corn by the Board of Agriculture has created a welcome cash crop for surplus corn, although this may cause the area to be increased or lead growers to store less for their own requirements. The amount of corn purchased at the Agricultural Station for the Board of Agriculture at the rate of \$1.75 per 100 lb. totalled 116,525 lb.

MINOR CROPS.

18 The vegetable industry started in 1937 has made rapid strides during the year. The Corozal Producers' Association marketed all the vegetables produced in the district and satisfactory returns to growers were obtained. This, however, has encouraged growers to extend their vegetable gardens without due consideration of the types of vegetables grown or the timing of production.

19 The capital necessary for maintaining a vegetable garden and the relatively short period of production does not point towards any great extension of this industry. With further experience and more orderly production and marketing this industry can still be of great value to the district.

20 The interest in ground provisions has increased very slowly but without proper demonstration the growing of these crops is not likely to develop rapidly.

II. AGRICULTURAL EDUCATION.

21 The progress of the school gardens has been maintained and pupils and parents are taking more interest in this branch of the schools' activity. There are now five schools in the district which have official recognition and support for their gardens and two more school gardens are awaiting approval. It is expected that the interest shown by the Education Department along with the co-operation of the Agricultural Department will considerably develop the system of agricultural training of boys.

22 The demand for boys leaving school and those who have continued their agricultural training as apprentices at the Agricultural Station has been increased owing to the extension of vegetable cultivation.

23 The Demonstration Plot for vegetables at Santa Clara was continued and has demonstrated that vegetables can be grown, on a small scale, under conditions prevailing in the villages. The inhabitants have been very reluctant to start growing on their own because they are still unfamiliar with vegetables as items of diet and lack information about marketing.

24 Further demonstration will take the form of small holdings with a view to the better use of land and the development of greater permanency in agricultural methods.

III. AGRICULTURAL STATION.

25 The population of the district has made full use of the facilities offered by the Agricultural Station during the year.

26 The difficulties in the procuring of adult labour continue, especially during the periods of demand for work on roads and chicle plantations.

27 One new area of $7\frac{1}{4}$ acres was cleared during the year and stumping carried out on some of the areas cut in 1936.

28 The following areas were under cultivation during 1938 :—

Citrus	6 acres
Bananas and Plantains	6 acres
Tung Oil, Avocado and Mango	$3\frac{1}{4}$ acres
Sugar cane	$3\frac{1}{2}$ acres
Maize	10 acres
Tobacco and Irish potatoes	1 acres
Nurseries, including vegetables	5 acres
Broom Corn	3 acres
Cotton	$\frac{1}{2}$ acres
Pulses and Ground provisions (Type plot)	2 acres
Pasture and Grass plots	$15\frac{1}{2}$ acres
Buildings and Houses	3 acres
Total	$58\frac{3}{4}$ acres

PLANT MATERIAL AND SEEDS DISTRIBUTED.

29 The following seeds and plants were distributed throughout the year:—

Black Beans	820 lb.
Bengal Beans	120 lb.
Citrus (budded)	
Grapefruit	157 trees
Oranges	106 trees
Limes and Lemons	81 trees
Sugar cane	
P.O.J.2878	15,000 cuttings
B.H.10(12)	6,500 cuttings
S.C.12/4	1,000 cuttings
Vegetables	10,312 seedlings

PLANT INTRODUCTIONS.

30 The following is a list of plants and seeds introduced and planted at the station during the year:—

- (a) U. S. A. Vegetable Seeds.
- (b) India Vegetable Seeds.
- (c) Canada Irish seed potatoes.
- (d) Local, including other Agricultural stations Several Miscellaneous economic and ornamental plants.

CROPS UNDER TRIAL.

31 Crops under trial at the station in 1938 were; Citrus, Sugar cane, Tung oil, Bananas, Ground provisions, Maize, Sea Island cotton, Vegetables, Grains and Pulses.

CITRUS.

32 Small crops were recorded in 1937 and during 1938 the production of fruit and the number of bearing trees has greatly increased. The Limes and Lemons are by far the most vigorous growers in the grove, next come the Grapefruit and lastly the Oranges and Mandarins, which latter only grew in height.

33 In order to compare the different stocks under trial the following data was collected from each tree at the end of the year:— Number of fruit, Average weight per fruit, Height in feet, Spread in feet and Girth of stock in inches. Table No. 8 shows the position of each type at the end of the year. The probable conclusions from these data are as follows:— Marsh grapefruit gives early and heavy bearings, on both Sour orange and Local lemon stocks, though Sour orange forms a stronger union and trees do not need artificial support. Thomson grapefruit on sour orange is unsatisfactory for this area. Lemons do not show enough differences due to stock to predict results yet. Further observations in 1939 may decide this. The Orange and Mandarin trees are of various ages and comparisons are at present difficult, although the Temple and Parson Brown varieties show promise.

34 Further plantings included Lu-Gin-Gong, Temple, Pineapple and Parson Brown oranges; Dancy tangerine, Davis grapefruit, Limequat, Californian Lime, Rang-pore lime, and Persian lime.

SUGAR CANE.

35 The sugar cane variety and multiplication plots planted in 1937 have made good progress but little information can be gathered until these are reaped and weighed in 1939. The varieties having strains of *Sacharrum barberi* and *S. spontaneum*, although vigorous, arrow profusely, are thin and do not drop their trash easily. It is unlikely that these types will prove suitable for extensive cultivation in this district.

36 With the establishment of areas of P.O.J.2878, B.H.10(12) and D.625 on almost all of the sugar estates, the station will be relieved of having to retain large areas of these for multiplication.

37 The following varieties of sugar cane are under observation at the station:— B.H.10(12), B.2935, B.2977, B.3011, B.3013, B.3124, B.3125, B.3127, B.3138, B.3179, B.3216, B.3224, B.3234, B.3439, Ba.11569, P.O.J.2725, P.O.J.2878, P.O.J.2883, E.K.28, Co.290, D.11/28, P.R.803, C.P.807, M.28, M.42, M.63, S.C.12/4, Uba (India), Uba (Naquin), Fiji, Merthi, Oshima, Kavangire and N.G.251.

38 The fertilizer trial laid down in 1936 was reaped during May 1938. The results of this experiment will be found in Part IV. of this report.

TUNG OIL, AVOCADO AND MANGO.

39 The progress of the Tung oil trees has been more promising during the year than was expected in 1937. The *Aleurites montana* has made little growth and the trees are inclined to be thin and tall. The *Aleurites trisperma* on the other hand, has made fair progress, the trees are strong and well shaped. A few fruit were set in August but dropped before reaching maturity. Both varieties appear to suffer badly from drought and high soil temperatures.

40 The Avocado have grown vigorously and are now from 14 to 16 feet in height. Blossoming started in December and a fair first crop is expected.

41 The Mangoes have also grown well during the year and blossoming has occurred on a few trees. It is proposed to await fruiting before attempting to top-work the trees with approved types.

TOBACCO.

42 During 1937 six varieties of tobacco seed were sown (viz.) Porto Rico V.9, Jamaica Wrapper, Orinoco, Golden Dollar, Virginia Bright, and Judy's Pride) but only V.9 and Virginia Bright made satisfactory growth. The tobacco harvested from these 1937 sowings was flue cured in the barn at the station in July 1938. This curing was carried out in five days of continuous heating. The temperatures in the barn were carefully controlled, starting 100 F. and finishing at 175 F. on the last day. The results were quite satisfactory. Virginia Bright proved to have the best colour and texture.

43 Sowings of seed for the 1939 crop started in September and germinations were very poor, only about 100 plants of Jamaica Wrapper and Bonanza being available for field planting. In October sowings of Judy's Pride and of a local type were made, germinations being very good.

44 The small plot of early planted tobacco has grown well and will be air cured, as it would not be worthwhile heating the barn for so small a quantity.

BANANAS.

45 The exceedingly dry conditions experienced during the year and the spread of Sigatoka leaf disease has caused production to drop below two bunches a week as well as to reduce the number of hands per bunch. No cleaning or pruning was done during the year in order to prevent a further drop in the humidity of the plot.

GROUND PROVISIONS.

46 A small Sweet potato trial was reaped in February 1938 and proved the superiority of the imported varieties—Red Nut and Black Rock from Barbados, V.52 from St. Vincent and Trinidad Red from Trinidad—over the local types, Yellow Heart, Tower Hill and Local White. The results of this trial appear in the Report of this station for 1937 para. 63. Further plantings of the above Sweet potatoes were made in August and will be reaped early in 1939.

47 Four varieties of Yams (Barbados, St. Vincent, Chinese and Water) were planted in July and will be reaped in the dry season of 1939.

48 Plots of Blue Beef, French No. 3, New Green and Commander Cassava planted during the year have made good progress.

49 Tannias (cocos), Dasheen and Arrowroot are also under trial.

MAIZE (CORN).

50 Ten acres were planted in maize in May and June and reaping was completed by the end of November. Yields of approximately 705 lb. of shelled corn per acre were obtained. A late planting of two acres of maize was made in November but owing to the dry weather which was experienced in that month and the first half of December germination was so poor that the crop had to be abandoned.

COTTON.

51 A small plot of West Indian Sea Island cotton and Nigerian commercial cotton was planted in September 1937 and reaped in February 1938. The Sea Island gave very encouraging results. Its flowers were selfed in order to provide pure seed for planting.

52 On the 28th October $\frac{1}{4}$ acre was planted with the selfed seed. This plot was supplied and an additional $\frac{1}{2}$ acre planted on 2nd December. This crop has made excellent progress so far and flowering started 60 days after planting.

LEGUMINOUS CROPS.

53 A wide range of Leguminous crops has been under trial during the year but little information has yet been obtained. Further observation and multiplication work on a few promising types is being carried out at the Agricultural station and at the Demonstration plot at Santa Clara.

VEGETABLES.

54 The results of the 1937-38 vegetable season occur in the annual Report of this station for 1937 (paras. 74-76). The sowing of vegetable seeds started in September and germinations were very poor. It was not until October when fresh seeds were obtained that a start could be made, in addition to this the absence of a long cold spell has made production late and disappointing.

55 The extensive watering, which had to be carried out owing to the lack of rain, has demonstrated the limitations in the size of vegetable gardens.

NURSERIES.

56 The increase in the demand for citrus plants and vegetable seedlings has caused further extension of the nurseries. The budding of citrus will depend on the orders received from growers but it will be possible to bud between 5,000 and 6,000 during 1939. Work in connection with the propagation of economic and ornamental plants continues.

PRODUCE SOLD DURING THE YEAR.

57 The sum of \$235.07 was collected at the Agricultural Station for produce sold during the year. This does not include the Hire of Plant and equipment or sales under the "Advances" which amounted to \$101.46.

EXTENSION WORK.

58 Plantations throughout the district were visited during the year along with most of the important villages.

59 The Sub-station at Orange Walk which it was intended to begin during the year had to be left until 1939 owing to staff changes. Implements for this station have been obtained and preliminary clearing of boundaries was carried out in December.

60 The Demonstration plot at Santa Clara has successfully shown that vegetables and ground provisions can be grown by peasants. It is hoped that during 1939 this plot will be turned into a Demonstration holding of about ten acres.

J. M. CAVE,

Assistant Agricultural Officer.

Corozal.

IV. DETAILS OF FERTILIZER TRIAL WITH SUGAR CANE.

A Fertilizer Trial on Sugar Cane.

Object:— To determine the effects of applications of standard fertilizers on the ultimate yield of plant canes.

Variety:— B.H. 10(12).

Field:— No. 3C.

History:— 1935 Secondary bush cleared. Maize planted. 1936, Maize reaped. Stumps removed and ploughed.

Planting:— Two, 2-eye cuttings planted 3 ft. apart in furrows 5 ft. apart. June 1936.

Fertilizer applied:— By hand along the furrows. Sept. 1936.

Weeding:— Cutlassing of weeds was carried out twice. July and September, 1936.

Reaped:— May 1938.

Rainfall:— 158.51 inches was recorded from the time of planting to reaping.

Treatments:— per acre.

A. No. fertilizer (control)

B. Sulphate of Ammonia $1\frac{1}{2}$ cwt.

C. Sulp. Amm.; Muriate Potash ($1\frac{1}{2}$:1) 2 cwt.

D. Sulp. Amm.; M'ate Pot.; Basic Superphosphate ($1\frac{1}{2}$:1:1) 2 cwt.

Layout:— Four randomised blocks of four treatments.

Results:— Given as tons cane per acre. Computed from the Plot size of approx. $\frac{1}{40}$ acre. (9 rows of 16 stools).

Block	Treatment A.	Treatment B.	Treatment C.	Treatment D.	Mean
1	12.75	20.50	13.75	18.55	16.4
2	17.00	19.75	24.50	23.25	21.1
3	13.75	28.75	29.75	19.75	23.0
4	19.25	32.50	26.25	26.75	26.2
Total	62.75	101.50	94.25	88.25	86.7
Mean	15.7	25.4	23.6	22.1	21.7

Analysis of Variance.

Due to.	Degrees of freedom.	Sum of squares.	Mean square of variance.
Total	15	514.00	
Treatments	3	56.03	
Blocks	3	50.49	
Error	9	444.48	49.38

Therefore S. D. = Square root of 49.38 = 7.03

S. E. = 7.03 divided by the square root of 4 = + or - 3.51.

Significance = 7.02 Tons per acre.

There is a significant difference between the control and applications of $1\frac{1}{2}$ cwt. per acre of Sulphate of Ammonia and also 2 cwt. ($1\frac{1}{2}$:1) of Sulphate of Ammonia and Muriate of Potash.

No significant differences occur between the control and an application of 2 cwt. ($1\frac{1}{2}$:1:1) of Sulphate of Ammonia, Muriate of Potash and Basic Super phosphate or between the different fertilizer treatments (Treatments B, C and D.)

(Sgd.) H. L. MANNING,

Assistant Agricultural Officer,

Corozal.

May 1938.

SECTION IV (C).

REPORT OF THE AGRICULTURAL STATION AND DISTRICT, PUNTA GORDA FOR THE YEAR 1938.

(Officer in Charge Mr. D. D. Haynes).

I. THE DISTRICT.

Climatically the year under review was favourable to agricultural pursuits, but any advantages gained were offset by the increased incidence of pests and diseases. Of the latter the Sigatoka Leaf-Spot disease of bananas was very prevalent and caused widespread damage among this crop. Growers are now realizing the seriousness of this disease and the difficulties of successfully combating it. Many are enquiring as to the possibilities of other crops.

BANANAS.

2 The output of stems during the year was 347,506 as against 398,648 stems in 1937. The purchase of this fruit is about equally distributed between the United Fruit Company and the owners of local schooners. Although the decline in total production is not very marked, owing to the increase in acreage put down to bananas in 1937, yet individual losses have been heavy due to the Sigatoka Leaf Disease. This disease appears to have been more conspicuous on the shallower types of soil along the San Antonio-Punta Gorda Road.

The quarterly shipments for the past four years are shown below :

Quarter	Stems 1935	Value	Stems 1936	Value	Stems 1937	Value	Stems 1938	Value
March	29,192	\$ 7,043	34,947	\$ 9,888	89,848	\$ 24,200	67,366	\$ 21,773
June	35,635	12,123	49,227	15,042	119,000	36,521	130,642	27,269
Sep.	46,823	16,000	80,923	24,395	119,200	43,800	88,695	32,394
Dec.	48,305	14,505	82,437	25,309	70,600	21,720	60,803	18,596
Total	160,000	49,676	247,534	74,634	398,648	126,241	347,506	100,032

RICE.

3 The weather proved ideal for rice and good crops were reaped from an appreciably increased acreage. The number of growers applying for low-lying Crown lands for the purpose of rice growing on a royalty basis has increased. Some six hundred acres have now been set aside for rice growing in the three reserves of San Antonio, Sunday Wood and Orange point. Several growers have made use of the Station's reaping gang and of the mechanical thresher. It has been noticed that more use is being made of grass knives for harvesting.

SUGAR.

4 The sugar industry in Toledo District is at a very low ebb. The few small mills maintain a fairly level output of sugar for local consumption from year to year.

CITRUS.

5 Little movement has taken place in the citrus industry, which is still of very small dimensions. It will be a few years before the plantations of recent years will come into full bearing.

FOOD CROPS.

6 There was an increase in the output of maize and beans. The Indians have shown considerably more interest in the production of food crops than in recent years.

LIVESTOCK.

7 An outbreak of Rabies in September presumably introduced by dogs spread to bovines, equines and swine and resulted in the death of several cattle, horses and pigs. For a time being the trade in pigs for the Belize market was at a standstill.

PESTS AND DISEASES.

8 The campaign against the Wee Wee ant was continued during the year. Altogether some 230 lb. of poison was sold to growers.

9 Swarms of a, so-called, locust did a considerable amount of damage in the Indian villages of Dolores, San Antonio, Columbia, Crique Sarca and in certain areas on the Temash River.

II. AGRICULTURAL EDUCATION.

10 Several visits were made to the school gardens recognized in 1937 and advice and short talks were given.

11 To encourage better methods of rice growing and in general farming several competitions were held. In a rice growing competition open to the whole of Toledo District there were thirty-two entries for dibbled rice. Three prizes and fifteen consolation prizes were awarded. In the class for transplanted rice entries were disappointing and only one prize and a consolation prize were awarded. A farming competition for the best mixed holding of not less than half an acre attracted six competitors and three prizes were awarded.

III. THE RICE EXPERIMENT AND DEMONSTRATION FARM, PUNTA GORDA.

12 The weather was very similar to that of 1937. Rains were light in March and April and heavy in June, July, August and September. The total precipitation was 179.81 in. as against 187.86 in. in 1937 and rain fell on 285 days as against 277 in 1937. Table No. 9 gives full details.

CROPS UNDER TRIAL.

13 This Station is devoted mainly to rice growing and its problems and rice is the only crop undergoing definite experiments. Observation plots of bananas, cassava, various temperate and tropical vegetables and ground provisions are maintained.

RICE.

14 Variety trials of the more promising types of rice were carried out in continuance of the previous years' programme. Four trials were laid down on randomised blocks and the results of two are shown in Table No. 10. In the variety trial under the dibbling method of establishment McKenzie Large, D 114 and No. 79 show an outstanding increase over the other varieties. Under conditions of transplanting Dcmerara Creole, D 114 and Lead show a considerable superiority in yield over the other varieties.

15 It is convenient here to recapitulate the work of the station since its inception in 1934. During the past five years variety trials have been laid down under four conditions:

- (a) Broadcasting.
- (b) Dibbling.
- (c) Transplanting Dry.
- (d) Transplanting Wet.

The layout of the plots in every case has been on a "Randomized Block" system for a single factor where the number of replications was the same as the number of varieties under trial. The method employed was to write the names of the varieties to be tested on pieces of paper and to draw these from a hat. e.g., varieties might be drawn in the following order:—

C. B. D. E. A & F.
B. D. E. A. F & C.
D. E. A. F. C & B.
E. A. F. C. B & D.
A. F. C. B. D & E.
F. C. B. D. E & A

the next row was obtained by shifting the varieties along one plot and so on until all six strips of plots were occupied. The size of the plots varied from 1/360 acre, 1/160 acre and 1/40 acre.

16 In harvesting all the plots of one variety were harvested together and their yields bulked. Although this method produces comparative yields of each variety yet by bulking the yields of each variety it has been impossible to state statistically the significance of the results.

17 Table No. 12 gives a resume of the results of the trials which were completed. In each experiment British Honduras Creole has been taken as standard (100) and the yields of other varieties calculated as percentages. Under conditions of dibbling no variety has shown a 10% increase over 'standard' in all three years. Variety 79 has shown a 10% or more increase in two out of the three years. Varieties 29, Demerara Creole, McKenzie Large, Lead and D 114 have shown a 10% or more increase over 'standard' in one year only.

18 Under conditions of Transplanting dry varieties 79, 29 and Demerara Creole have shown a 10% or more increase in each of the three years. Upland, Ramcajara, Kalyaman, Bluestick and McKenzie Large in two years out of three years. H 7, Lead, D 114 and H 6 have only shown an increase of 10% or more in one year.

19 As in previous years Table No. 12 has been prepared to indicate the yields per acre of varieties under the three conditions of broadcasting, dibbling and transplanting.

20 Small stocks are maintained of all varieties which have been received. Newly imported short-aged varieties Perillanel (2601) and Suduheenata h f-9 from Ceylon and Sempor and Pote from Java show promise.

CITRUS.

21 The main varieties of grapefruit and oranges have been established for the purposes of supplying bud-wood and for observing the behaviour of the trees in this district of heavy rainfall. A small nursery is maintained for supplying the limited local demand for trees.

CASSAVA.

22 Sixteen varieties of Cassava have been established in order to obtain sufficient planting material for future experimental work.

EXTENSION WORK.

23 The main extension work consists of giving attention to rice growers. Three rice growing reserves were set aside during the year. Plots were laid down at two reserves to demonstrate improved methods of planting and reaping and to provide seed for these areas. The plot at Monkey River was a failure. The Sunday Wood plot was successful in justifying the attempt at demonstration.

24 The Agricultural Instructor toured Stann Creek, Corozal and Belize Districts in July with reference to rice growing conditions in these areas.

IV. RICE MILL.

25 The purchases of the Board of Agriculture through the Rice Mill show a considerable increase in the production of various crops. Padi increased from 28,648 lb. in 1937 to 54,894 lb. in 1938, maize similarly increased from 3,186 lb. to 24,015 lb. A considerable increase in the purchase of beans and peas were also shown, viz., Black beans 9,913 lb., Black Eye Peas 82 lb. and Red Kidney Beans 78 lb. 286 lb. of Cacao were also purchased.

26 The milling returns show that 7,881 lb. of padi produced 3,989 lb. rice, a recovery of 50.6%.

27 Help is given to the local rice growers in loans of seeds. In the year under review 4,990 lb. of padi was loaned and 1,669 lb. was returned at the end of the season.

28 Further encouragement given consists in arranging the threshing of growers' padi for which a small sum is charged to cover running costs. To certain other growers a charge of 25 lb. of padi per 1,000 lb. was levied to cover the cost of transport from the rice fields to the mill.

TABLE No. 1.
COMPARATIVE STATEMENT OF BANANA SHIPMENTS BY AREAS.

B U N C H E S.

AREA	1934		1935		1936		1937		1938	
	U.F.Co.	Sch.	U.F.Co.	Sch.	U.F.Co.	Sch.	U.F.Co.	Sch.	U.F.Co.	Sch.
Belize ..	26,481	—	37,152	—	134,062	—	235,182	—	174,855	—
Stann Creek ..	89,081	—	108,961	—	134,144	—	143,767	—	83,204	—
Mullins River ..	6,037	67,059	5,127	28,556	8,774	143,923	10,327	—	4,663	—
Commerce Bight ..	3,619	—	3,927	—	11,093	—	13,025	—	8,330	—
Sittee River ..	10,474	—	12,333	—	16,597	—	20,757	—	17,310	—
Monkey River ..	49,749	—	70,183	—	61,928	—	96,226	—	62,628	—
Punta Gorda ..	9,339	31,453	56,323	33,494	104,622	80,984	223,639	—	153,175	—
TOTAL ..	194,780	98,512	294,006	62,050	471,220	224,907	742,923	196,062	504,165	272,007
Combined Total	293,292	—	356,056	—	696,127	—	938,985	—	776,172	—
VALUE \$..	93,721	—	125,274	—	244,238	—	330,491	—	282,890	—

TABLE No. 2.
EXPORTS OF COCONUTS AND COPRA.
COCONUTS.

	1934	1935	1936	1937	1938
Number	5,232,861	6,589,320	4,310,110	4,958,980	4,779,290
Value	\$64,855	\$96,515	\$63,930	\$77,267	\$49,803
Approximate average Value per 1,000 ..	\$12.39	\$14.64	\$14.83	\$15.58	\$10.42
COPRA.					
Pounds	332,883	5,230	425,996	356,708	363,936
Value	\$5,010	\$52	\$10,456	\$10,975	\$8,048
Approximate average Value per 100 lbs.	\$1.50	\$0.99	\$2.45	\$3.01	\$2.21

TABLE No. 3.
EXPORTS OF CITRUS FRUITS AND CANNED AND JUICED FRUIT.

ARTICLE	1934		1935		1936		1937		1938	
	Quantity Cwt.	Value \$	Quantity cwt.	Value \$	Quantity cwt.	Value \$	Quantity cwt.	Value \$	Quantity cwt.	Value \$
Grapefruit	.. 13,400	33,569	15,450	32,280	18,781	41,177	14,852	31,430	36,327	84,447
Oranges	.. 2,143	1,896	1,595	1,720	291	527	324	587	264	438
Tangerines	.. 197	478	117	219	181½	326	170	315	No. 270,800	846
Other Citru Fruit	—	—	—	—	—	—	—	—	No. 1,850	9
Grapefruit Canned	lb. .. 15,904	1,180	lb. 39,104	1,999	lb. 158,531	8,381	lb. 90,090	4,663	lb. 140,160	4,960
Grapefruit Juice	lb. .. 14,300	500	lb. 4,706	156	lb. 68,494	2,703	lb. 2,997	140	lb. 95,344	3,770
TOTAL VALUE	—	\$37,623		\$36,374		\$53,114		\$37,135		\$94,530

TABLE No. 4.
AGRICULTURAL PRODUCE EXPORTS 1938.

25

PRODUCT							Destination	Quantity	Value \$	% by value of All Agricul- tural Produce 1938	% by value of All Products 1938
Coconuts	(No.)	..	..	..	..	..	U.S.A.	4,726,740	49,367	—	—
							Canada	52,550	436	—	—
							TOTAL	4,779,290	49,803	11.40	2.74
Copra	(lb.)	..	..	..	..	..	Mexico	78,686	1,180	—	—
							U. S. A.	250	6	—	—
							Panama City	285,000	6,872	—	—
							TOTAL	363,936	8,084	1.84	.41
Bananas	(Bchs.)	..	..	..	..	..	U.S.A.	776,172	282,890	64.78	15.58
Plantains	(No.)	..	..	..	..	..	U.S.A.	37,500	308	.08	.02
Rum	(Gal.)	..	..	..	..	..		—	—	—	—
Grapefruit Fresh (Cwt.)		..	..	..	..	..	U.K.	24,765	60,245	—	—
							Canada	10,857½	22,795	—	—
							Bermuda	695½	1,383	—	—
							Mexico	39	24	—	—
							TOTAL	36,327	84,447	19.11	4.65
Oranges	(Cwt.)	..	..	..	..	..	U.K.	44	82	—	—
							Canada	81	151	—	—
							Bermuda	90	170	—	—
							Honduras	49	35	—	—
							Mexico	806	846	—	—
							TOTAL	1,070	1,284	.29	.07
Tangerines	(Cwt.)	..	..	..	..	..	Mexico	4	9	—	—
Other Citrus Fruit							Mexico	23	11	—	—
	(Cwt.)	..	..	..	..	..	Canada	23	49	—	—
							TOTAL	50	69	.02	—
Grapefruit Canned (Cwt.)		..	..	..	..	..	U.K.	405	2,160	—	—
							Canada	525	2,800	—	—
							TOTAL	930	4,960	1.13	.27
Grapefruit Juice (Cwt.)		..	..	..	..	..	U.K.	426	1,720	—	—
							Canada	407	1,950	—	—
							Bermuda	18	100	—	—
							TOTAL	851	3,770	.86	.20
Other Agricultural Produce		..	..	..	..	..			1,069	.49	.10
Agricultural Produce							TOTAL	—	436,648	—	24.04
Total Value of Agricultural Exports									\$436,648	—	24.04 %
Total Value of Forest Produce									\$1,369,460	—	75.45 %
Total Value of Marine Produce									\$9,227	—	.5.08 %
									\$1,815,335	—	100.00 %

TABLE No. 5.

RAINFALL, 1938.

OBSERVATION STATION	January		February		March		April		May		June		July		August		September		October		November		December		Totals		Raindays Total	
	1938	1937	1938	1937	1938	1937	1938	1937	1938	1937	1938	1937	1938	1937	1938	1937	1938	1937	1938	1937	1938	1937	1938	1937	1938	1937	1938	1937
COROZAL DISTRICT.																												
TOWN—																												
Agricultural Station	3.13	4.83	2.12	1.16	.04	1.89	.69	1.36	5.87	10.33	7.97	9.85	1.76	10.68	6.16	2.83	8.57	10.47	13.75	9.50	2.66	4.26	.25	2.05	52.37	69.31	87	164
Louisville	1.37	4.05	2.48	1.89	nil	2.06	.51	1.45	8.21	9.21	4.19	10.35	1.87	10.48	7.79	5.57	12.74	8.49	6.83	9.35	3.81	3.36	.26	1.69	50.06	67.95	123	150
Pembroke Hall	1.66	6.63	2.89	3.14	.29	1.45	2.19	.88	4.93	6.00	2.50	8.39	1.94	7.39	7.98	8.07	12.43	6.15	7.40	5.34	4.11	2.81	.20	3.84	48.52	61.08	85	128
Pembroke Hall	.92	4.82	3.10	1.34	nil	.53	1.32	1.19	3.75	6.46	2.85	9.97	2.26	6.95	7.72	8.07	11.08	5.37	7.23	5.62	3.56	1.88	1.23	1.98	45.02	54.18	101	147
ORANGE WALK DISTRICT.																												
TOWN																												
Freshwater Creek	1.00	7.14	4.10	5.23	.18	2.47	1.63	2.25	5.75	6.02	8.05	9.89	4.12	13.14	8.68	8.06	14.13	7.48	5.69	9.16	6.86	2.68	1.88	3.21	62.01	76.73	155	182
Freshwater Creek	2.93	5.55	5.96	2.65	.08	3.01	2.66	1.97	6.89	7.62	8.23	9.57	2.88	10.70	9.41	7.30	14.75	6.12	4.69	6.71	7.01	1.34	2.49	4.49	67.98	67.03	148	158
BELIZE DISTRICT.																												
TOWN																												
Bamboo Patch	8.89	5.69	4.38	1.05	.32	3.95	1.49	5.08	5.48	2.51	9.85	11.26	3.98	10.55	10.77	6.41	12.13	10.60	12.68	8.29	8.52	4.87	3.31	5.68	81.20	75.43	207	195
Turneffe	3.37	10.87	4.92	3.60	nil	3.84	3.11	2.86	6.62	9.25	9.90	12.39	4.03	15.20	14.54	8.79	22.59	5.77	6.02	9.03	2.41	2.00	—	7.54	78.11	92.13	127	144
Turneffe	3.99	nil	4.53	1.37	nil	3.20	.31	3.46	2.18	3.58	4.64	3.50	2.00	11.52	8.99	3.01	8.14	7.63	19.31	6.38	8.49	9.86	6.61	5.69	69.19	59.20	130	147
CAYO DISTRICT.																												
TOWN																												
.. ..	2.70	4.70	5.71	3.00	nil	2.00	.61	5.41	.75	2.85	9.11	2.78	6.57	8.75	10.35	3.58	7.70	5.27	2.10	5.87	7.23	1.18	6.65	7.08	59.48	52.47	75	71
STANN CREEK DISTRICT.																												
TOWN																												
Agricultural Station	nil	3.59	nil	5.53	nil	3.42	1.96	1.52	14.57	8.88	16.06	14.14	5.74	14.86	17.28	5.00	39.57	11.06	22.36	7.85	14.66	3.90	6.02	6.02	138.22	85.87	72	100
Industrial School	4.04	7.16	4.36	4.31	.95	4.46	4.46	2.92	6.71	8.45	6.45	18.27	5.17	24.33	12.05	11.67	10.54	13.02	10.31	13.02	9.11	4.70	2.10	9.01	81.35	121.38	212	104
Alta Vista	4.81	9.06	7.08	5.26	nil	2.41	3.73	4.09	6.96	14.70	7.30	17.44	5.55	23.48	12.78	9.88	21.10	12.17	8.81	14.16	6.21	4.70	8.22	9.01	92.73	126.54	180	223
Middlesex	5.82	10.19	8.40	2.57	nil	5.53	1.26	4.23	9.75	16.47	13.05	19.81	8.48	30.78	16.88	10.00	22.35	10.18	10.50	15.55	9.23	5.26	6.60	9.82	166.01	146.30	184	152
Middlesex	4.48	10.15	3.46	2.37	nil	3.18	3.97	5.43	2.88	10.62	9.50	23.68	6.05	32.38	12.70	6.40	9.50	14.44	19.30	11.30	4.73	1.86	2.12	4.20	92.60	79.77	82	150
TOLEDO DISTRICT.																												
TOWN																												
Agricultural Station	5.96	12.02	9.83	10.00	.67	2.61	9.16	10.84	12.97	13.75	24.66	26.02	28.01	36.50	26.28	34.16	33.75	31.20	17.48	14.10	8.32	4.70	8.12	8.23	186.11	203.27	172	170
Tropical Oil Products Co. ..	7.07	8.31	10.89	10.03	1.43	3.49	4.32	9.17	12.24	13.40	24.00	23.20	35.43	33.45	25.07	33.84	32.15	26.35	12.71	15.08	6.70	3.30	6.84	7.97	170.81	187.86	285	277
Tropical Oil Products Co. ..	6.50	8.10	7.45	3.60	1.30	1.95	4.63	7.72	4.92	10.68	30.85	15.70	26.65	23.28	21.70	18.75	20.47	19.86	10.82	14.57	5.33	1.97	4.43	6.70	145.14	132.88	233	212

TABLE No. 6. METEOROLOGY, AGRICULTURAL STATION, STANN CREEK, 1938.

MONTH	Relative Humidity			Rainfall		Air Temperatures			Soil Temperature		
	Mean	Highest	Lowest	Inches	Rain Days	Mean Daily Maxm.	Shade Minm.	Mean Daily	Mean At 9:00 a.m.	Mean At 3:00 p.m.	1 Foot
January	..	82.0	59.0	4.04	18	80.0	66 0	77.0	77.0	77.4	
February	..	81.0	71.0	4.36	18	81.0	67 0	77.4	77.4	80.3	
March	..	71.0	54.0	.05	2	84.0	68 0	79.7	79.7	80.4	
April	..	70.0	52.0	4.46	7	86.0	69 0	81.4	81.4	82.0	
May	..	76.0	56.0	6.71	19	88.0	73 0	82.0	82.0	84.0	
June	..	81.1	65.0	6.45	19	86.1	74 0	83.4	83.4	83.4	
July	..	77.6	67.0	5.17	22	87.0	73 0	84.1	84.1	84.4	
August	..	76.0	63.0	12.05	25	88.0	73 0	83.5	83.5	83.8	
September	..	78.1	59.0	19.54	26	87.0	72 0	81.5	81.5	81.6	
October	..	80.0	57.0	10.31	20	85.0	70 0	80.7	80.7	80.9	
November	..	79.0	49.0	6.11	23	83.0	68 0	79.6	79.6	79.8	
December	..	75.0	48.0	2.10	13	80.0	63 0	76.7	76.7	77.0	
MEANS	..	77.2	58.0	—	—	84.0	70 5	80.5	80.5	81.2	
TOTALS	..	—	—	81.35	212	—	—	—	—	—	

TABLE No. 7. METEOROLOGY, AGRICULTURAL STATION, COROZAL, 1938.

MONTH	BAROMETRIC PRESSURE			RELATIVE HUMIDITY		RAINFALL		SHADE TEMP.		SOIL TEMP.		
	Corr. M.S.L.	High M.S.L.	Low M.S.L.	Aver- age	High	Low	Ins.	Rain Days	Mean Max.	Mean Min.	9:00 a.m.	3:00 p.m.
January	.. 30.06	30.40	29.84	80	99	46	1.37	5	81	63	75.3	78.8
February	.. 30.06	30.28	29.06	75	99	46	2.48	12	82	65	78.4	78.5
March	.. 29.98	30.20	29.88	69	92	50	—	—	87	69	80.5	80.9
April	.. 29.87	30.16	29.80	76	99	42	.51	2	87	72	82.3	82.7
May	.. 29.91	30.12	29.02	73	99	54	8.21	9	87	75	84.6	84.7
June	.. 29.99	30.10	29.83	80	99	67	4.19	20	87	72	84.0	84.5
July	.. 29.96	30.12	29.69	84	99	58	1.87	12	88	75	85.8	86.2
August	.. 29.97	30.08	29.80	79	99	54	7.79	15	86	73	86.7	86.8
September	.. 29.96	30.10	29.80	84	98	60	12.74	18	88	72	86.9	87.0
October	.. 30.02	30.12	29.86	76	93	49	6.83	11	86	69	83.9	84.1
November	.. 30.04	30.26	29.86	76	95	44	3.81	16	84	68	81.7	81.8
December	.. 30.11	30.22	29.96	74	98	47	.26	3	82	64	77.8	78.1
TOTAL	359.93	362.16	356.40	926	1169	617	50.06	123	1025	837	987.9	994.1
MEAN	29.98	30.18	29.70	77.2	97.4	51.4			85.4	69.8	82.3	82.8

TABLE No. 8.

TABLE OF DATA ON CITRUS AT THE AGRICULTURAL STATION, COROZAL, DECEMBER, 1938.

Type	Stock	No. of Trees	Average No. of fruit per tree	Average weight per fruit in oz.	Average height in feet	Average spread in feet	Average girth of stock in inches	Planted
GRAPEFRUIT	Local Lemon	66	54	10	7½	6¾	9	Oct. 1935
"	Sour Orange	25	62	9½	9½	8	13	" "
"	Grapefruit	25	4	12	10	8	14	" "
"	Rough Lemon	5			10	8¾	14¾	" "
Thomson	Sour Orange	8			6	5½	6	" "
LEMONS	Sour Orange	25	98	6½	12	11¾	15	" "
"	Local Lemon	25	71	5	10	9½	12¾	" "
Genoa	Local Lemon	25	36	3½	10¾	8¾	11¾	" "
Meyer	Grapefruit	6	38	5	6½	5	8½	" "
"	Local Lemon	9	4	3¼	7¾	8¼	9¾	" "
LIMES	Sour Orange	9	530	¾	12	11¼	14¾	" "
ORANGES	Sour Orange	15	.2	7	8¾	7	11	" "
Parson Brown	Sour Orange	5	18		8½	5½	9	" "
Washington Navel	Sour Orange	25	13	4	7¾	6½	9¼	" "
Valencia	Sour Orange	25	4		7	4½	7	Nov. 1937
Temple	Sour Orange	10	50		6	3¾	5¼	" "
MANDARINS	Grapefruit	20	.3		8½	4	9½	Oct. 1935
King	Sour Orange	5			8	7¾	10	" "
Satsuma	Grapefruit	5			6¾	5½	7½	" "

TABLE No. 10.

(a) DIBBLED. VARIETY TRIAL PLOT; PLOTS 1/160 OF AN
ACRE EACH; ONE 7 x 7 LATIN SQUARES.

Variety	Yield lb. per acre	Order of Merit
Lead	1,326	4th.
Blue Stick	938	6th.
D 114	1,760	2nd.
No. 79	1,600	3rd.
McKenzie Large	1,783	1st.
B. H. Creole	1,189	5th.
Demerara Creole	896	7th.

(b) TRANSPLANTED. VARIETY TRIAL PLOT: PLOTS 1/160 OF
AN ACRE EACH; ONE 8 x 8 LATIN SQUARES.

Variety	Yield lb. per acre	Order of Merit
B. H. Creole	1,000	8th.
No. 79	1,460	7th.
Demerara Creole	2,620	1st.
H. 7	2,020	5th.
Lead	2,480	3rd.
D 114	2,580	2nd.
No. 75	2,060	4th.
No. 29	1,680	6th.

TABLE No. 11.**SUMMARY OF RICE VARIETY TRIALS.**

Variety	1 9 3 5		1 9 3 6		1 9 3 8		
	Dibbled	Trans- planted Dry	Dibbled	Trans- planted Dry	Dibbled	Transplanted	
						Dry	Wet
British Honduras Creole	100	100	100	100	100	100	100
H 7	103	210	78				202
79	111	180	88	155	134	128	146
29	114	159	93	222		131	168
Upland	62	138	93	192			
Ramcajara	100	133	100	229			
Kalyaman	74	136	106	214			
Bluestick	91	102	100	155	78	140	
Demerara Creole	118	203	100	200	75	112	262
McKenzie Large			100	152	150	159	
Lead					111	150	248
D 114					149	150	258
H 6						119	
75							206

N.B. In each experiment the yields per acre have been converted into percentages of British Honduras Creole.

TABLE No. 12.

Variety	Broadcast		Dibbled		Transplanted	
	Yield lb.	Per Acre.	Yield lb.	Per Acre.	Yield lb.	Per Acre (lb.).
B. H. Creole	861	984	36	1,082	Discarded	
D 114	395	1,720	262	1,255	34	3,872
Demerara Creole	240	1,328	141	1,287	104	3,412
H. 7			50	1,210	21	2,541
No. 79	1,161	1,720	40	1,500	51	4,407
No. 78	48	1,500	25		7	1,220
No. 75					29	2,922
Lead	434	1,728	120	1,320	62	4,010
McKenzie Large	87	1,800	25	1,420	80	4,537
McKenzie Small					37	3,654
Akkulu	258	1,600	20		36	3,111
Upland					25	2,880
No. 29					17	2,420
A. 16-34					8	1,760
Kristna Kala Kulu					46	3,555
Kalyaman					3	1,815
Blue Stick					34	2,938
Ramcajara					7	1,210
H. 6					26	1,997
Total	3,484		719		627	

